SEQUENCE LISTING

```
<110> Cahoon, Edgar B
<120> A Cytochrome P450 enzyme associated with the synthesis of \Delta^{12}-epoxy
fatty acids
<130> BB1465 US NA
<140>
<141>
<150> 60/219833
<151> July 21, 2000
<160> 7
<170> Microsoft Office 97
<210> 1
<211> 1733
<212> DNA
<213> Euphorbia lagascae
<400> 1
gcataaaagg aaaatggagc agaaaaatct ctcttttccg agcattttaa taagttttct 60
gettgtttta atettagtag tagteatgag gttgtggaag aaacagaate cacetecagg 120
gccatggaag tttcctatca taggtaatct tcctcattta ttactcactt ctgatctagg 180
ccatgaacgt tttagagcct tggctcaaat ttatggacct gttatgagtc ttcaaattgg 240
ccaaqtttca gctqttqtca tttcttcaqc tqaaqcaqcc aaaqaqqtta tqaaaactca 300
ggetgatgcc ttcgcccaac gccctatcgt cttggacgca cagattgtgt tttataatcg 360
qaaaqatqtc ttqtttqctt catatqqaqa tcactqqaqq caqatqaaqa aaatttqqat 420
acttgaattt ctgagtgcca aaaaagttca atcctccagg ttaatccgag aggaagaaat 480
ggaggatgcc atcacattcc tccgttcgaa agccggatct ccggtcaata ttacaaagat 540
cattlatqqc attataattt cqatcatqat aaqaacatcc gttqqtaatt qtaaqcaaaa 600
agaaagattg ctgagtgttg ccgatgcagt caatgaggca gcgacgagtt ttggcaccgc 660
agacgetttt eegacgtgga aattaettea etatateatt ggagetgagt caaaacceag 720
gegtttgcat caggagattg acgatatact tgaagagatt citaatgaac acaaagccaa 780
taageetttt gaageggata aettaatgga tgttetattg aatetteaaa aaaatggaaa 840
cgttccagtg ccagtgacaa acgaaagcat caaagcatcc gttttgcaaa tgtttactgc 900
cqqqaqcqaa acaacttcga aagctacaga atgggtaatg gcaqaqctqa tqaaaaatcc 960
aactgaacta agaaaagcac aagaagaagt tagacaagta tttggtgaaa tgggaaaagt 1020
tgatgaatca agatttcatg atttgaaatt cttcaagtta gtggttaaag aaactctaag 1080
attacatect coggttgtct tgattccgag ggagtgtaga gaaacaacac gaattgatgg 1140
atatgaaatt catccgaaca ctcgaattgt tgtgaatgct tgggcgatag gaagagatcc 1200
taatacttqq tcqqaacctq qaaaqtttaa cccaqaaaqq tttaaaqatt qtqcaattqa 1260
ttataaaggg acgacatttg aactggtacc atttggtgca ggaaaaagaa tatgtcctgg 1320
cattacttca gctattacca atttggagta tgtcattata aatctattat atcattttaa 1380
ttgggaactg gccgatggaa ttacacctca aacacttgat atgactgaag ctattggcqq 1440
tgctctcagg aaaaaaatag atcttaagtt gattcctatt ccatatcaag ttagcttagg 1500
ctcaaatatt tottgattac ataggagggt tgaaatatat ataataaact ttaattaacg 1560
atgttctaat atggtttggg tgagttataa taggttttcc accgatcata taagtagcct 1620
tctttgatgg atgggttaga ttataatgag ttgtgggttg gatttttaga tgggttaaat 1680
gatttggatg gataataata aattgaaatg ttttctttt caaatccgaa aaa
<210> 2
<211> 500
 <212> PRT
```

<213> Euphorbia lagascae

- $<\!400\!>$ 2 Met Glu Gln Lys Asn Leu Ser Phe Pro Ser Ile Leu Ile Ser Phe Leu 1 5 10 15
- Leu Val Leu Ile Leu Val Val Val Met Arg Leu Trp Lys Lys Gln Asn $20 \hspace{1.5cm} 25 \hspace{1.5cm} 30 \hspace{1.5cm}$
- Pro Pro Pro Gly Pro Trp Lys Phe Pro Ile Ile Gly Asn Leu Pro His $35 \ \ 40 \ \ 45$
- Gln Ile Tyr Gly Pro Val Met Ser Leu Gln Ile Gly Gln Val Ser Ala 65 70 75 80
- Val Val Ile Ser Ser Ala Glu Ala Ala Lys Glu Val Met Lys Thr Gln $85 \hspace{1cm} 90 \hspace{1cm} 95$
- Ala Asp Ala Phe Ala Gln Arg Pro Ile Val Leu Asp Ala Gln Ile Val 100 $$105\$
- Phe Tyr Asn Arg Lys Asp Val Leu Phe Ala Ser Tyr Gly Asp His Trp $115 \\ 120 \\ . \\ 125$
- Arg Gln Met Lys Lys Ile Trp Ile Leu Glu Phe Leu Ser Ala Lys Lys 130 135 140
- Val Gln Ser Ser Arg Leu Ile Arg Glu Glu Glu Met Glu Asp Ala Ile 145 \$150\$
- Thr Phe Leu Arg Ser Lys Ala Gly Ser Pro Val Asn Ile Thr Lys Ile \$165\$
- Ile Tyr Gly Ile Ile Ile Ser Ile Met Ile Arg Thr Ser Val Gly Asn $180\,$ $180\,$ Leu Leu Ser Val Ala Asp Ala Val Asn Glu
- 195 200 205 Ala Ala Thr Ser Phe Gly Thr Ala Asp Ala Phe Pro Thr Trp Lys Leu
- Leu His Tyr Ile Ile Gly Ala Glu Ser Lys Pro Arg Arg Leu His Gln
- Glu Ile Asp Asp Ile Leu Glu Glu Ile Leu Asn Glu His Lys Ala Asn
- Lys Pro Phe Glu Ala Asp Asn Leu Met Asp Val Leu Leu Asn Leu Gln
- Lys Asn Gly Asn Val Pro Val Pro Val Thr Asn Glu Ser Ile Lys Ala 275 280 285
- Ser Val Leu Gln Met Phe Thr Ala Gly Ser Glu Thr Thr Ser Lys Ala 290 \$295\$

Thr Glu Trp Val Met Ala Glu Leu Met Lys Asn Pro Thr Glu Leu Arg Lys Ala Gln Glu Glu Val Arg Gln Val Phe Gly Glu Met Gly Lys Val Asp Glu Ser Arg Phe His Asp Leu Lys Phe Phe Lys Leu Val Val Lys 345 Glu Thr Leu Arg Leu His Pro Pro Val Val Leu Ile Pro Arg Glu Cys 355 360 Arg Glu Thr Thr Arg Ile Asp Gly Tyr Glu Ile His Pro Asn Thr Arg Ile Val Val Asn Ala Trp Ala Ile Gly Arg Asp Pro Asn Thr Trp Ser 385 390 Glu Pro Gly Lys Phe Asn Pro Glu Arg Phe Lys Asp Cys Ala Ile Asp Tyr Lys Gly Thr Thr Phe Glu Leu Val Pro Phe Gly Ala Gly Lys Arg 430 Ile Cys Pro Gly Ile Thr Ser Ala Ile Thr Asn Leu Glu Tyr Val Ile 440 Ile Asn Leu Leu Tyr His Phe Asn Trp Glu Leu Ala Asp Gly Ile Thr Pro Gln Thr Leu Asp Met Thr Glu Ala Ile Gly Gly Ala Leu Arg Lys Lys Ile Asp Leu Lys Leu Ile Pro Ile Pro Tyr Gln Val Ser Leu Gly 485 490 Ser Asn Ile Ser

<210> 3 <211> 502

<212> PRT <213> Capsicum annuum

<400> 3

Met Glu Ile Gln Phe Thr Asn Leu Val Ala Phe Leu Leu Phe Leu Ser

Ser Ile Ile Leu Leu Lys Lys Trp Lys Thr Gln Lys Leu Asn Leu

Pro Pro Gly Pro Trp Lys Leu Pro Phe Ile Gly Ser Leu His His Leu

Ala Val Ala Gly Pro Leu Pro His His Gly Leu Lys Asn Leu Ala Lys

Leu Tyr Gly Pro Leu Met His Leu Arg Leu Gly Glu Ile Pro Thr Val

Ile Ile Ser Ser Pro Arg Met Ala Lys Glu Val Leu Lys Thr His Asp Leu Ala Phe Ala Thr Arg Pro Lys Leu Val Val Ala Asp Ile Val His Tyr Asp Ser Thr Asp Ile Ala Phe Ser Pro Tyr Gly Glu Tyr Trp Arg Gln Ile Arg Lys Ile Cys Ile Leu Glu Leu Leu Ser Ala Lys Met Val Lys Phe Phe Ser Ser Ile Arg Gln Asp Glu Leu Ser Met Met Val Ser Ser Ile Arg Thr Met Pro Asn Phe Pro Val Asn Leu Thr Asp Lys Ile Phe Trp Phe Thr Ser Ser Val Thr Cys Arg Ser Ala Leu Gly Lys Ile Cys Arg Asp Gln Asp Lys Leu Ile Ile Phe Met Arg Glu Ile Ile Ser Leu Thr Gly Gly Phe Ser Ile Ala Asp Phe Phe Pro Thr Trp Lys Met 215 Leu His Asp Val Gly Gly Ser Lys Thr Arg Leu Leu Lys Ala His Arg Lys Ile Asp Glu Ile Leu Glu His Val Val Asn Glu His Lys Gln Asn Arg Ala Asp Gly Gln Lys Gly Asn Gly Glu Phe Gly Gly Glu Asp Leu 265 Ile Asp Val Leu Leu Arg Val Arg Glu Ser Gly Glu Val Gln Ile Ser Ile Thr Asp Asp Asn Ile Lys Ser Ile Leu Val Asp Met Phe Ser Ala Gly Ser Glu Thr Ser Ser Thr Thr Ile Ile Trp Ala Leu Ala Glu Met Met Lys Lys Pro Ser Val Leu Ala Lys Ala Gln Ala Glu Val Arg Gln 330 Val Leu Lys Glu Lys Lys Gly Phe Gln Gln Ile Asp Leu Asp Glu Leu Lys Tyr Leu Lys Leu Val Ile Lys Glu Thr Leu Arg Met His Pro Pro Ile Pro Leu Leu Val Pro Arg Glu Cys Met Lys Asp Thr Lys Ile Asp

395

Gly Tyr Asn Ile Pro Phe Lys Thr Arg Val Ile Val Asn Ala Trp Ala

390

	Ile	Gly	Arg	Asp	Pro 405	Glu	Ser	Trp	Asp	Asp 410	Pro	Glu	Ser	Phe	Ser 415	Pro	
	Glu	Arg	Phe	Glu 420	Asn	Ser	Ser	Val	Asp 425	Phe	Leu	Gly	Ser	His 430	His	Gln	
	Phe	Ile	Pro 435	Phe	Gly	Ala	Gly	Arg 440	Arg	Ile	Cys	Pro	Gly 445	Met	Leu	Phe	
	Gly	Leu 450	Ala	Asn	Val	Gly	Gln 455	Pro	Leu	Ala	Gln	Leu 460	Leu	Tyr	His	Phe	
	Asp 465	Arg	Lys	Leu	Pro	Asn 470	Gly	Gln	Ser	His	Glu 475	Asn	Leu	Asp	Met	Thr 480	
	Glu	Ser	Pro	Gly	Ile 485	Ser	Ala	Thr	Arg	Lys 490	Asp	Asp	Leu	Val	Leu 495	Ile	
	Ala	Thr	Pro	Tyr 500	Asp	Pro											
<210> 4 <211> 51 <212> DNA <213> synthetic construct																	
<400> 4 teaaggagaa aaaacceegg atceatggag cagaaaaate tetettttee g														51			
<210> 5																	
<400> 5 ggccagtgaa ttgtaatacg actcactata gggcg														35			
<210> 6 <211> 35 <212> DNA <213> synthetic construct																	
<400> 6 gcggccgcga attcggaaaa tggagcagaa aaatc														35			
	<210)> '	7					-									
	<212	?> I	ONA	netio	c cor	ıstrı	ıct										
<400> 7 gcggccgcgg atccttagaa catcgttaat taaag												35					